CHAPTER 6

CONCEPT REVIEW QUESTIONS

1. In Chapter 4, we defined several bond return measures, including the *coupon*, the *coupon rate*, the *coupon yield*, and the *yield to maturity*. Indicate whether each of these measures (a) focuses on the total return or just one of the components of total return and (b) focuses on money returns or percentage returns.

The coupon is a euro return measure that focuses only on the income component. The coupon rate and coupon yield are percentage return measures that focus strictly on the income component. The YTM is a percentage return measure that includes both components of return, and therefore is a way of measuring a bond's total return.

2. You buy a share for €40. During the next year, it pays a dividend of €2, and its price increases to €44. Calculate the total dollar and total percentage return and show that each of these is the sum of the dividend and capital gain components.

The total dollar return is €6. The total percentage return is 15%. The dividend yield is 5% and the capital gain is 10%, which sum to the total return of 15%.

3. When might an investor be more concerned with total money return and when with percentage terms?

Total money return and percentage returns are not necessarily correlated and should therefore be compared across projects before an investment decision is made.

4. Why do investors need to pay attention to *real returns*, as well as *nominal returns*?

Nominal returns measure the increase in the euro value of an investment, but real returns measure how much purchasing power increases over time. If investors care about how much they can buy with the money that they accumulate, then real returns are more important than nominal returns. Nominal returns are important too. For example, investors pay taxes on nominal returns

5. If the realized risk premium is negative in any year, what does that imply?

A negative risk premium implies that the asset's risk falls with respect to the market's portfolio, and so does its returns.

6. Is it always true that an asset's nominal return is higher than its real return? When would that not be the case?

That would not be the case if inflation is negative.

7. Suppose nominal bond returns approximately follow a normal distribution. Using the data above, construct a range that should contain 95 percent of historical bond returns. (*Hint:* Use the mean and standard deviation of bond returns to calculate the endpoints of this range)

95 percent of bond returns should fall within two standard deviations of the mean. So lower endpoint of the range for bond returns is -11.2% (5.2% − 2 × 8.2%) and the upper endpoint is 21.6% (5.2% + 2 × 8.2%).

8. Suppose there is an asset class with a standard deviation that lies about halfway between the standard deviations of shares and bonds. Based on this section what would you expect the average return on this asset class to be?

A standard deviation halfway between the standard deviation of stocks and bonds would be about 14%. Finding 14% on the horizontal axis of Figure 6.6 and moving up to the trendline, we would predict an average return for this asset class of about 8.5%.

9. Why is the standard deviation of a portfolio usually smaller than the standard deviations of the assets that comprise the portfolio?

Individual assets contain both systematic and unsystematic risk. When we combine these assets in a portfolio, the unsystematic risks cancel out, leaving only the systematic risk. Therefore, a portfolio's standard deviation will be smaller than the standard deviations of the assets in the portfolio

10. In Figure 6.8, why does the line decline steeply at first and then flatten out?

As we add more stocks to a portfolio, the unsystematic risks of the individual stocks begin to cancel out. This effect is quite pronounced when diversification begins (i.e., when we have two stocks rather than one or three stocks rather than two). However, as we add more and more stocks to the portfolio, the incremental diversification benefit becomes very small. In Figure 6.8 we show that with just 11 stocks we can achieve a portfolio that has a standard deviation almost as low as the entire market's standard deviation. Notice that our 11 stocks are drawn from several different industries. We are sampling from many different sectors of the economy. Suppose we doubled the size of this portfolio to 22 stocks, but we did so by adding one more stock from each of the industries already represented. This would provide very little additional diversification.

11. Explain why the dots in Figure 6.9 appear to be almost randomly scattered.

The market should reward riskier investments with higher returns, but only if by the term “riskier” we mean “systematically riskier.” The unsystematic risk of a given investment doesn’t matter because investors can eliminate that risk at virtually no cost by diversifying. Therefore, the market will not reward investors who choose to bear unsystematic risk unnecessarily. In Figure 6.9, the vertical axis measures returns and the horizontal axis measures standard deviation. Because Figure 6.9 is focused on individual stocks rather than on portfolios, the risk measure we are plotting includes both systematic and unsystematic risk. This clouds the underlying relationship between risk and return because our horizontal axis is not using a “clean” risk measure.